REMARKS

Applicant and its representative have reviewed the Examiner's Office Action, and have amended the claims in response.

The amendments are primarily made for the purpose of putting into independent form certain claims that the Examiner rejected only on the basis of double patenting. A terminal disclaimer obviating that rejection is attached, and it is therefore believed that claims 6, 9, 10, 12, 14, 15, 23, 27, 28 and 33-38 are now in allowable form.

Regarding the Examiner's rejections on the basis of obviousness, in Paragraph 2, the Examiner cites to the combination of Fensel (U. S. Patent No. 6,641,896) and Braga (US 6,284,820) to reject claims 1-2, 5, 7-9, 13, 15-18, 21, 23-25, 29 and 31-32. Fensel discloses a fire-retardant roofing underlayment. There are numerous patentable differences between the present claims and Fensel.

A key difference between the two materials is in their configurations – i. e., whether based on a single compound or a dual compound. Fensel's patent refers to a membrane that is based on Styrene-Butadiene-Styrene modified bituminous compound alone (column 2 lines 22-26). It is noteworthy that this material is not based on dual-compound. In the absence of specific mention of a dual-compound structure, one can infer that the same compound is used above and below the reinforcement. Moreover it is well known in the industry that these materials use the same compound on the top side and the bottom side of the reinforcing carrier. Column 3 lines 20-24 state the self-adhesive compound is used to impregnate the reinforcing mat.

Further indication that the material of Fensel's patent is based on single-compound (the same 'self-adhesive' compound on the top side and bottom side of the reinforcing carrier) can be found in Column 4 lines 10-16, where it states that use of coal slag on the upper surface significantly decreases the effective tackiness in the exposed uncovered bitumen sheet material, thereby revealing that the compound on the upper surface is indeed 'self-adhesive'. Therefore it can be concluded that these membranes are not based on dual-compound technology whereby

two different compounds are applied on opposite sides of the reinforcing carrier. Though Fensel does discuss the use of an SBS compound on the top layer and a self-adhesive compound on the bottom layer (column 4 lines 28-34), he makes no mention of the use of an APP compound on the top layer. The claims of the present patent application are based on dual-compound technology, whereby, for example, an APP compound is applied on the top layer and a self-adhesive compound is applied on the bottom layer.

The Examiner has suggested that a bituminous composition comprising APP as disclosed on Braga's patent might be substituted for the top compound of Fensel's material to arrive at the membrane of our invention. However, there is no suggestion in either Fensel or Braga, based on the state of the art at the time this application was filed. It is simply not possible to substitute SBS modified bituminous compound with an APP modified bituminous compound and apply a self-adhesive compound on the bottom layer.

It is important to note that self-adhesive compounds are generally based on SBS polymers. Self-adhesive compounds are formulated using mainly Styrene-Butadiene-Styrene (SBS), with varying proportions of one or more of the following: Styrene-Isoprene-Styrene (SIS), hydrocarbon tackifying resins, oils, etc., to render the resulting compound sticky. Thus both the top and bottom compounds are based on "rubber" and, as such, there are no issues related to cross-contamination of mixes during manufacture or compatibility between the top and bottom compounds in the field. This is not the case with an APP modified bituminous compound. It is imperative to note that APP is a considered a 'plastic' and is therefore not immediately compatible with a 'rubber' such as SBS or SIS. Consequently APP modified bitumen and SBS modified bitumen have greatly varying physical and chemical properties such as viscosity, softening point, needle penetration, low temperature flexibility, etc. For example a typical APP modified bituminous compound has a softening point of 300^0F whereas the corresponding value for an SBS modified bituminous compound is 245^0F. One cannot simply substitute an SBS modified compound with an APP modified compound and obtain an APP based self-adhesive membrane.

Moreover Fensel fails to teach anything regarding the formulation, process of

manufacture, unique application features and other complexities of APP based self-adhered membranes. Whereas SBS modified bituminous membranes using polyester or fiberglass reinforcements with or without self-adhesive compound on the bottom layer is prior art, a roofing underlayment with APP modified asphalt compound on the upper layer and self-adhesive compound on the bottom layer does not exist in the market, and is therefore innovative.

In Paragraph 3 of the Office Action, Examiner cites Yamaguchi along with Fensel and Braga in rejecting some of the claims related to the use of PolyVinyl Butyral (PVB) as an additive in self-adhesive formulations.

Yamaguchi does indeed list Styrene-Butadiene-Styrene (SBS), Polyvinyl Butyral (PVB) and several other chemicals or a combination thereof as possessing adhesive properties. However the referenced patent makes absolutely no mention whatsoever of incorporating any of the listed resins as additives in asphalt to impart 'adhesive' characteristics to the resulting blend. As such compatibility between asphalt and the various chemicals possessing adhesive qualities mentioned in the patent is unknown. It is well known that not all resins that are inherently adhesive in nature render adhesive properties when added to asphalt. Simply that a resin possesses adhesive characteristics does not guarantee that it is a suitable asphaltic modifier with respect to achieving adhesive properties. Some of the known adhesives in the market are simply 'alternatives' to other resins currently used in self-adhesive formulations; i. e., they do not offer any performance or economical advantage. Some resins do provide better adhesive properties than widely used adhesives such as Styrene-Butadiene-Styrene (SBS) and Styrene-Isoprene-Styrene (SIS); however such formulations are cost-prohibitive.

The claims of the this application identify of PolyVinyl Butyral (PVB) as an additive in asphalt that not only improves adhesive properties but also significantly decreases cost. It is critical that the resins used to impart adhesive characteristics not adversely impact critical mix processing parameters or chemical properties such as softening point, viscosity, needled penetration, low temperature flexibility, etc. Addition of PVB to asphalt does not negatively impact the physical or chemical properties in any manner except improving adhesive properties.

In Paragraph 4 of the Office Action, the Examiner cites to the combination of Phillips,

Fensel and Braga in rejecting the claims related to use of release film. Whereas release liners are a component of most self-adhesive roofing membranes, the applicant has invented an atactic polypropylene (APP) based dual compound self-adhesive roofing membrane suitable for use as a tile underlayment that is constructed with release liner on the bottom layer to prevent sticking of the self-adhesive compound to adjacent sections when formed as a roll during the manufacturing process.

In Paragraph 5 of the Office Action, the Examiner cites the patent of Zickell along with Fensel and Braga to reject the claims related to use of polyester mat as a carrier. Whereas use of polyester as a reinforcing carrier in roofing membranes is well known, the claims in this application are generally directed to an atactic polypropylene (APP) based dual compound self-adhesive roofing membrane suitable for use as a tile underlayment that is manufactured with a polyester mat.

In view of the amendments and the remarks above, it is believed that the claims are now in allowable form, and an Office Action so indicating is requested. Please note that the Applicants have also converted four previously dependent claims into independent claims, which brings the total number of independent claims to seven. Having paid for three independent claims, Applicant believes that a fee of 4 x $100 = $400 is due in connection with this amendment. You are hereby authorized to deduct the required amount from our Deposit Account No. 02-0400 (Baker & McKenzie). When identifying such a withdrawal, please use the Attorney Docket Number POLY-102-CIP-1.

December 19, 2005

Respectfully,

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